

# Riparian Forest Restoration Procedure

Following is the Washington State Department of Natural Resources procedure PR 14-004-150 intended to restore and protect stream and wetland riparian areas:

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**PROCEDURE****Department of Natural Resources**

**Date:** April 2006

**Cancels:** PR 14-004-150 IDENTIFYING AND PROTECTING RIPARIAN AND WETLAND MANAGEMENT ZONES IN THE WEST-SIDE HCP PLANNING UNITS, EXCLUDING THE OESF PLANNING UNIT (August 1999). Effective immediately

**PR 14-004-150** IMPLEMENTATION PROCEDURES FOR THE HABITAT CONSERVATION PLAN RIPARIAN FOREST RESTORATION STRATEGY

**APPLICATION** Westside HCP Planning Units, Excluding the OESF Planning Unit

**DISCUSSION**

The riparian strategy for west-side planning units, excluding the OESF, has a two-fold objective of:

- (1) maintaining or restoring freshwater habitat for salmonid species; and
- (2) contributing to the conservation of other species that are dependent upon aquatic and riparian areas. This is accomplished by identifying riparian and wetland areas and ensuring that management activities within those areas adequately protect riparian function.

Riparian function can be viewed from both societal and ecological perspectives. From a societal perspective, riparian function includes the production of commodities and other services for human benefit. Salmon, wildlife, and timber are examples of the commodities produced by riparian ecosystems. The delivery of high quality water, flood control, and recreation is an example of services provided by riparian ecosystems. From an ecological perspective, riparian function can be viewed as providing habitat for numerous plant and animal species including clean water, shade, large woody debris and detrital nutrients for salmon habitat, damp soil and logs for terrestrial amphibian habitat, snags for cavity nesting birds, etc.

The Implementation Procedures for the Riparian Forest Restoration Strategy will be followed to identify and manage riparian and wetland zones. The riparian management

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zone consists of a managed riparian buffer and, where appropriate, a wind buffer to protect the integrity of the managed riparian buffer. The riparian buffer has been designed to maintain/restore riparian processes that influence the quality of salmonid freshwater habitat and to contribute to the conservation of other aquatic and riparian obligate species. Consideration has been given to water temperature, stream bank integrity, sediment and detrital nutrient load, and large woody debris.

### **ACTION**

1. The first step in implementing the Riparian Forest Restoration Strategy is to verify the accuracy of water-type information for all waters currently designated as Type 4 or 5 that are located within the boundary of the proposed activity. Among others, either or both of the following two methods may be used:
  - a. Water type information may be verified through consultation with fisheries biologists from DNR, tribes, or other agencies.
  - b. Water type information may be verified by certified and/or trained personnel using the protocol specified in WAC 222-16-030, Washington Forest Practices Board Emergency Rules (stream typing), November 1996 and the Forest Practices Board Manual.

This stream typing system will now be officially referenced as the “Water Typing System for Forested State Trust HCP Lands”. The “Water Typing System for Forested State Trust HCP Lands” complete provisions are in the table below:

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| Type 1 | Type 1 Water means all waters, within their ordinary high-water mark, as inventoried as “shorelines of the state” under chapter 90.58 RCW and the rules promulgated pursuant to chapter 90.58 RCW, but not including those waters’ associated wetlands as defined in chapter 90.58 RCW. |
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| Type 2 | <p>Type 2 Water shall mean segments of natural waters that are not classified as Type 1 Water and have a high fish, wildlife, or human use. These are segments of natural waters and periodically inundated areas of their associated wetlands, which:</p> <ol style="list-style-type: none"><li>(a) Are diverted for domestic use by more than 100 residential or camping units or by a public accommodation facility licensed to serve more than 100 persons, where such diversion is determined by the department to be a valid appropriation of water and the only practical water source for such users. Such waters shall be considered to be Type 2 Water upstream from the point of such diversion for 1,500 feet or until the drainage area is reduced by 50 percent, whichever is less;</li><li>(b) Are diverted for use by federal, state, tribal or private fish hatcheries. Such waters shall be considered Type 2 Water upstream from the point of diversion for 1,500 feet including tributaries if highly significant for protection of downstream water quality. The department may allow additional harvest beyond the requirements of Type 2 Water designation provided the department determines after a landowner-requested on-site assessment by the department of fish and wildlife, department of ecology, the affected tribes and the interested parties that:</li></ol> |
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- (i) The management practices proposed by the landowner will adequately protect water quality for the fish hatchery; and
  - (ii) Such additional harvest meets the requirements of the water type designation that would apply in the absence of the hatchery;
- (c) Are within a federal, state, local, or private campground having more than 30 camping units: Provided, That the water shall not be considered to enter a campground until it reaches the boundary of the park lands available for public use and comes within 100 feet of a camping unit, trail or other park improvement;
- (d) Are used by substantial numbers of anadromous or resident game fish for spawning, rearing or migration. Waters having the following characteristics are presumed to have highly significant fish populations:
- i) Stream segments having a defined channel 20 feet or greater in width between the ordinary high-water marks and having a gradient of less than 4 percent.
  - (ii) Lakes, ponds, or impoundments having a surface area of 1 acre or greater at seasonal low water.
- (e) Are used by salmonids for off-channel habitat. These areas are critical to the maintenance of optimum survival of juvenile salmonids. This habitat shall be identified based on the following criteria:
- (i) The site must be connected to a stream bearing salmonids and accessible during some period of the year; and
  - (ii) The off-channel water must be accessible to juvenile salmonids through a drainage with less than a 5% gradient.

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Type 3    Type 3 Water shall mean segments of natural waters that are not classified as Type 1 or 2 Water and have a moderate to slight fish, wildlife, and human use. These are segments of natural waters and periodically inundated areas of their associated wetlands which:

- (a) Are diverted for domestic use by more than 10 residential or camping units or by a public accommodation facility licensed to serve more than 10 persons, which such diversion is determined by the department to be a valid appropriation of water and the only practical water source for such users. Such waters shall be considered to be Type 3 Water upstream from the point of diversion for 1,500 feet or until the drainage area is reduced by 50 percent, whichever is less;
- (b) Are used by significant numbers of anadromous or resident game fish for spawning, rearing or migration. Guidelines for determining fish use for the purpose of typing waters are described in Appendix 3. If fish use has not been determined:
  - (i) Waters having the following characteristics are presumed to have significant anadromous or resident game fish use:

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- (A) Stream segments having a defined channel of 2 feet or greater in width between the ordinary high-water marks in Western Washington and having a gradient 16 percent or less;
  - (B) Stream segments having a defined channel of 2 feet or greater in width between the ordinary high-water marks in Western Washington and having a gradient greater than 16 percent and less than or equal to 20 percent; and having greater than 50 acres in contributing basin size in Western Washington;
- (ii) The department shall waive or modify the characteristics in (i) above where:
- (A) Waters are confirmed, long term, naturally occurring water quality parameters incapable of supporting anadromous or resident game fish;
  - (B) Snowmelt streams have short flow cycles that do not support successful life history phases of anadromous or resident game fish. These streams typically have no flow in the winter months and discontinue flow by June 1; or
  - (C) Sufficient information about a geographic region is available to support a departure from the characteristics in (i), as determined in consultation with the department of fish and wildlife, department of ecology, affected tribes and interested parties.
- (iii) Ponds or impoundments having a surface area of less than 1 acre at seasonal low water and having an outlet to an anadromous fish stream.
- (iv) For resident game fish ponds or impoundments having a surface area greater than 0.5 acre at seasonal low water.
- (c) Are highly significant for protection of downstream water quality. Tributaries which contribute greater than 20 percent of the flow to a Type 1 or 2 Water are presumed to be significant for 1,500 feet from their confluence with the Type 1 or 2 Water or until their drainage area is less than 50 percent of their drainage area at the point of confluence, whichever is less.
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Type 4    Type 4 Water classification shall be applied to segments of natural waters which are not classified as Type 1, 2 or 3, and for the purpose of protecting water quality downstream are classified as Type 4 Water upstream until the channel width becomes less than 2 feet in width between the ordinary high-water marks. Their significance lies in their influence on water quality downstream in Type 1, 2, and 3 Waters. These may be perennial or intermittent.

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Type 5    Type 5 Water classification shall be applied to all natural waters not classified as Type 1, 2, 3, or 4; including streams with or without well-defined channels, areas of perennial or intermittent seepage, ponds, natural sinks and drainage ways having short periods of spring or storm runoff.

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2. After verification of water type information, or the decision to manage Type 4 or 5 Waters as Type 3, Step 2 in implementing the Implementation Procedures for the RFRS is to determine the boundary of the riparian management zones for the proposed activity. This step has three parts. First, the 100-year flood plain must be identified for all Types 1, 2, 3, and 4 Waters; it is from the outer edge of this area that the riparian buffer is measured. Second, the appropriate riparian buffer must be identified. Third, the need for a wind buffer must be evaluated and, if needed, located.
    - a. Identify the 100-year flood plain for each Type 1, 2, 3, and 4 Water. Among others, any, or a combination, of the following methods may be used:
      - i. Identify the 100-year flood plain using information from FEMA (Federal Emergency Management Agency) or flood insurance rate maps.
      - ii. Identify the 100-year flood plain. One method that may be used is the following field location method, a modification of the information contained in the Forest Practices Board manual's *The Standard Methods for Measuring Physical Parameters of a Stream* (dated 7/95). Using this method, averages for stream reaches may be determined by:
        - A. Establish the ordinary high water mark (OHWM) using vegetation or historical evidence.
        - B. Divide the OHWM channel width into at least 4 equal sections.
        - C. At the edge of each section, measure the depth from the elevation of the OHWM to the stream bottom.
        - D. Calculate the average depth by adding all of the depths measured in C. above together, then dividing the total by the number of measurements.
        - E. Calculate the 100-year flood plain elevation by adding the value calculated in D. above for the average depth to the elevation of the OHWM (doubles the average channel depth).
        - F. Field-locate the intersection of the 100-year flood plain with each side of the channel bank using hand levels and level rods, or clinometers and measuring tapes,
    - OR  

By calculating the distance from the OHWM to the 100-year flood-level intersection using ground slope measurements taken in the field. (Example: For a channel with bank slopes of 10% on each side and an average depth to OHWM of 1.2 feet, the distance is equal to rise over run, so divide 1.2 feet by .10 to yield a horizontal distance of 12 feet from the OHWM to the 100-year flood plain.
    - b. Next, identify and measure the riparian buffer, using horizontal distance, from the outer edge of the 100-year flood plain or the boundary of the wetland (wetlands identified using the Forest Practices Board manual's *Guidelines for Wetland Delineation*, dated 6/93). The appropriate buffer width is dependent upon water type for streams, size for wetlands, and the site index of conifer stands one would expect to develop in the area.
      - i. For Type 1, 2, and 3 Waters, and for all wetlands that are greater than 1 acre in size, the average width of the riparian buffer will be equal to or greater than

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the average height an adjoining conifer stand would be expected to reach at 100 years of age (using site index, which may be determined by using one or more of the following methods: State Soil Survey data, Forest Resource Inventory System data (FRIS), on-site calculation from fixed or variable plots taken every 660 feet on a transect that parallels the stream with at least two dominant conifer trees per plot measured and site calculated using site table, or DNR Intensive Management Planning System (DNRIMPS) or other appropriate growth-and-yield model). Regardless of site index, the average width of the buffer will be no less than 100 feet.

- ii. For Type 4 Waters, and for all wetlands between 0.25 and 1 acre in size, the width of the riparian buffer will be 100 feet.
- c. The final step in identifying the riparian management zone is to evaluate the need and, if needed, the appropriate width and location for wind buffers to protect the integrity of the riparian management zone.
  - i. Determine if at least a moderate risk of windthrow exists for all Type 1 and 2 Waters, and for Type 3 Waters equal to or greater than 5-feet wide. Moderate is defined as 45 percent or more blowdown after 5 years and is determined using local knowledge, the Buffer Strip Survival Rate Worksheet (from Steinblums, Froehlich, and Lyons, Designing Stable Buffer Strips For Stream Protection), or other model approved by the State Lands Assistant. Where at least a moderate risk exists, apply a 100-foot (horizontal distance) wind buffer on Type 1 and 2 Waters, and a 50-foot wind buffer on Type 3 streams greater than 5-feet wide. The buffer shall be located on the windward side of the stream.
  - ii. Type 3 Waters less than 5 feet wide, and Type 4 and 5 Waters will not have a wind buffer. Wetlands will not receive a wind buffer, except for those that meet the description of "off-channel habitat" as discussed in WAC 222-16-030 (dated 6/93), page 16-10 under (2) "Type 2 Water," which will be treated as Type 2 Waters.
- 3. Once the riparian management zone, and wetlands and their associated buffers, has been identified, proposed management activities will be evaluated based on Section 2 of the Implementation Procedures for the Habitat Conservation Plan Riparian Forest Restoration Strategy, attached.

End Procedure

APPROVED BY: \_\_\_\_\_

Gretchen Nicholas

Division Manager, Land Management Division

DATE: April 20, 2006

SEE ALSO:

DNR Habitat Conservation Plan, 1997

Implementation Procedures for the Habitat Conservation Plan Riparian Forest Restoration Strategy (April 2006)